II. CLAIM AMENDMENTS

1. (Currently amended) A method for reducing visual artefacts due to block boundaries between decoded image blocks in a frame of a digital video signal, comprising:

performing an adaptive block boundary filtering operation on a block boundary formed between a first decoded image block on a first side of the block boundary and a second decoded image block on a second side of the block boundary, the first decoded image block having been encoded using a first type of encoding method and the second decoded image block having been encoded using a second type of encoding method~~,~~; and

~~wherein the method comprises determining~~ examining the types of the first and second encoding methods to determine a value of at least one parameter of the adaptive block boundary filtering operation performed on the block boundary ~~by examination of the types of the first and second encoding methods~~.

2. (Previously presented) A method according to Claim 1, wherein the frame comprises at least one region of image blocks and the adaptive block boundary filtering operation performed on the block boundary is dependent at least in part on a region type of an image block on a first side of the block boundary and a region type of an image block on a second side of the block boundary.

3. (Cancelled)

4. (Cancelled)

5. (Cancelled)

6. (Previously presented) A method according to Claim 1, wherein said at least one parameter is selected from a group comprising: a number of pixels to be examined, a number of pixels to be filtered, an activity measure providing an

indication of the difference between pixel values on one side of the block boundary, a filtering window.

7. (Previously presented) A method according to Claim 1, comprising selecting a number of pixels for examination from at least one side of the block boundary, in dependence on the image content of the frame in the environment of the block boundary.

8. (Previously presented) A method according to Claim 7, wherein the number of pixels selected for examination depends on a difference in pixel value between pixels across the block boundary.

9. (Previously presented) A method according to Claim 7, wherein the number of pixels selected for examination depends on the size of a quantization step used to quantize coefficients used in encoding the image blocks.

10. (Previously presented) A method according to Claim 9, wherein the number of pixels (n) selected for examination is determined by the formula:

$$n = \begin{cases} 0 & \Delta \geq 2.00\alpha \\ 1 & 1.50\alpha \leq \Delta < 2.00\alpha \\ 2 & 1.00\alpha \leq \Delta < 1.50\alpha \\ 3 & 0.66\alpha \leq \Delta < 1.00\alpha \\ 4 & 0.40\alpha \leq \Delta < 0.66\alpha \\ 5 & 0.25\alpha \leq \Delta < 0.40\alpha \\ 6 & 0 \leq \Delta < 0.25\alpha \end{cases}, \qquad (2)$$

where Δ is the difference in value between pixels across the block boundary, α = QP·log(QP) and QP is the size of the quantization step used to quantize said coefficients used in encoding the image blocks.

11. (Previously Presented) A method according to Claim 7, wherein the number of pixels selected for examination is first defined according to the image content of the frame in the environment of the block boundary and then truncated in

dependence on the type of encoding method used to encode an image block in the environment of the block boundary to give a truncated number of pixels for examination.

12. (Previously presented) A method according to Claim 11, wherein the truncated number of pixels (n_{tr}) is determined by selecting a truncation value (trval) according to the table

	Region type of the Block on the Second side							
Region type of the Block on the First side	INTRA		COPY		CODED		NOT_CODED	
INTRA	n	n	2	2	n	4	n	2
COPY	2	2	2	2	2	4	2	2
CODED	4	n	4	2	4	4	4	2
NOT_CODED	2	n	2	2	2	4	2	2

and using said selected truncation value (trval) with the formula

$$n_{tr} = \min(\text{trval}, n), \qquad (3).$$

13. (Previously presented) A method according to Claim 1, comprising selecting certain pixels to be filtered and determining a new value for each pixel to be filtered on the basis of pixels that appear in a filtering window set around the pixel.

14. (Previously presented) A method according to Claim 7, comprising selecting pixels to be filtered from the pixels selected for examination.

15. (Previously presented) A method according to Claim 13, wherein the new value of the pixel is the mean value of the pixels that appear in the filtering window.

16. (Previously presented) A method according to Claim 13, wherein the size of the filtering window is determined according to the table

d_r ($d_l > 1$)	r_1	r_2	r_3
1	X	X	X
2	1	X	X
3	1	1*	X
4	2	2	X
5	2	2	2**
6	3 or 2***	3	3

where

* means that the filtered value of pixel r_1 is used for filtering of pixel r_2

** means that the filtered values of pixels r_1 and r_2 are used for filtering pixel r_3

*** means 3 if $d_l > 2$, otherwise 2,

and wherein the integer parameter d_r is an activity measure indicating activity on a first side of the block boundary, and the integer parameter d_l is an activity measure indicating activity on a second side of the block boundary, r_1, r_2 and r_3 are three pixels on the first side of the block boundary closest to the boundary in this order,

X means that the pixel is not filtered, a number means that in addition to the pixel to be filtered, a quantity of pixels shown by the number are taken to the filtering window from both sides of the pixel to be filtered, and "3 or 2" means "3, if $d_l > 2$, otherwise 2", and for determining the new value of the pixels to be filtered on the other side of the block boundary, a filtering window defined similarly is used, with the exception that all r's are replaced by l's and vice versa.

17. (Previously presented) A method according to Claim 16, wherein said activity measure is determined on the basis of changes in pixel values.

18. (Previously presented) A method according to Claim 16, wherein

$d_r = 6$, if $|r_1 - r_j| \leq \beta/j$ with all $j \in [1,6]$,

otherwise: $d_r = i$, where i meets the conditions

$i \in [1, n_{tr}]$,

$|r_1 - r_{i+1}| > \beta/i$, and

$|r_1 - r_j| \leq \beta/j$ with all $j \in [1,i]$,

wherein the auxiliary parameter $\beta = 4 \cdot \log(QP)$ and QP is the size of the quantization step used to quantize coefficients used in encoding the image blocks, and the value of the parameter d_l is determined similarly, with the exception that all r's are replaced by l's.

19. (Currently amended) A block boundary filter for reducing visual artefacts due to block boundaries between decoded image blocks in a frame of a digital video signal, the filter being arranged to perform an adaptive block boundary filtering operation on a block boundary formed between a first decoded image block on a first side of the block boundary and a second decoded image block on a second side of the block boundary, the first decoded image block having been encoded using a first type of encoding method and the second decoded image block having

been encoded using a second type of encoding method, wherein the block boundary filter is arranged to examine the types of the first and second encoding methods to determine a value of at least one parameter of the adaptive block boundary filtering operation performed on the block boundary ~~by examination of the types of the first and second encoding methods~~.

20. (Previously presented) A block boundary filter according to Claim 19, wherein the frame comprises at least one region of image blocks and the filter is arranged to perform said adaptive block boundary filtering operation on the block boundary in dependence at least in part on a region type of an image block on a first side of the block boundary and a region type of an image block on a second side of the block boundary.

21. (Cancelled)

22. (Cancelled)

23. (Cancelled)

24. (Previously presented) A block boundary filter according to Claim 19, wherein said at least one parameter is selected from a group comprising: a number of pixels to be examined, a number of pixels to be filtered, an activity measure providing an indication of the difference between pixel values on one side of the block boundary, a filtering window.

25. (Previously presented) A block boundary filter according to Claim 19, wherein the filter is arranged to select a number of pixels for examination from at least one side of the block boundary in dependence on an image content of the frame in the environment of the block boundary.

26. (Previously presented) A block boundary filter according to Claim 25, further arranged to select said number of pixels for examination in dependence on the difference in pixel value between pixels across the block boundary.

27. (Previously presented) A block boundary filter according to Claim 19, wherein the filter is arranged to select a number of pixels for examination in dependence on the size of a quantization step used to quantize coefficients used in encoding the image blocks.

28. (Previously presented) A block boundary filter according to Claim 27, wherein the number of pixels (n) selected for examination is determined according to the formula:

$$n = \begin{cases} 0 & \Delta \geq 2.00\alpha \\ 1 & 1.50\alpha \leq \Delta < 2.00\alpha \\ 2 & 1.00\alpha \leq \Delta < 1.50\alpha \\ 3 & 0.66\alpha \leq \Delta < 1.00\alpha \\ 4 & 0.40\alpha \leq \Delta < 0.66\alpha \\ 5 & 0.25\alpha \leq \Delta < 0.40\alpha \\ 6 & 0 \leq \Delta < 0.25\alpha \end{cases}, \qquad (2)$$

where Δ is the difference in value between pixels across the block boundary, α = QP·log(QP) and QP is the size of the quantization step used to quantize said coefficients used in encoding the image blocks.

29. (Previously Presented) A block boundary filter according to Claim 25, wherein the filter is arranged to truncate the number of pixels selected for examination in dependence on the type of encoding method used to encode an image block in the environment of the block boundary.

30. (Cancelled)

31. (Previously presented) A block boundary filter according to Claim 29, wherein the filter is arranged to truncate the number of pixels selected for examination by selecting a truncation value (trval) according to the table:

	Type of the Block on the Second side							
Type of the Block on the First side	INTRA		COPY		CODED		NOT_CODED	
INTRA	n	n	2	2	n	4	n	2
COPY	2	2	2	2	2	4	2	2
CODED	4	n	4	2	4	4	4	2
NOT_CODED	2	n	2	2	2	4	2	2

and using said selected truncation value (trval) with the formula:

$$n_{tr} = \min(\text{trval}, n), \qquad (3).$$

32. (Previously presented) A block boundary filter according to Claim 19, wherein the filter is arranged to select certain pixels to be filtered and to determine a new value for each pixel to be filtered on the basis of pixels that appear in a filtering window set around the pixel.

33. (Previously presented) A block boundary filter according to Claim 32, wherein the filter is arranged to calculate the new value for each pixel to be filtered as a mean value of the pixels that appear in the filtering window.

34. (Previously presented) A block boundary filter according to Claim 32, wherein the filter is arranged to determine the size of the filtering window according to the table

d_r ($d_l > 1$)	r_1	r_2	r_3
1	X	X	X
2	1	X	X
3	1	1*	X
4	2	2	X
5	2	2	2**
6	3 or 2***	3	3

where

* means that the filtered value of pixel r_1 is used for filtering of pixel r_2

** means that the filtered values of pixels r_1 and r_2 are used for filtering pixel r_3

*** means 3 if $d_l > 2$, otherwise 2,

and wherein the integer parameter d_r is an activity measure indicating activity on a first side of the block boundary, and the integer parameter d_l is an activity measure indicating activity on a second side of the block boundary, r_1, r_2 and r_3 are three pixels on the first side of the block boundary closest to the boundary in this order, X means that the pixel is not filtered, a number means that in addition to the pixel to be filtered, a quantity of pixels shown by the number are taken to the filtering window from both sides of the pixel to be filtered, and "3 or 2" means "3, if $d_l > 2$, otherwise 2", and means for using a filtering window defined similarly for determining the new value of the pixels to be filtered on the other side of the block boundary, with the exception that all r's are replaced by l's and vice versa.

35. (Previously presented) A block boundary filter according to Claim 34, wherein

$d_r = 6$, if $|r_1 - r_j| \leq \beta/j$ with all $j \in [1,6]$,

otherwise: $d_r = i$, where i meets the conditions

$i \in [1, n_{tr}]$,

$|r_1 - r_{i+1}| > \beta/i$, and

$|r_1 - r_j| \leq \beta/j$ with all $j \in [1,i]$,

wherein the auxiliary parameter $\beta = 4 \cdot \log(QP)$ and QP is the size of the quantization step used to quantize transformation coefficients used in transformation coding of the image blocks, and the value of the parameter d_l is determined similarly, with the exception that all r's are replaced by l's.

36. (Cancelled)

37. (Previously presented) A video encoder comprising means for coding and means for decoding a digital video signal by blocks, a block type being defined according to the coding method for a block selected according to a predetermined set of coding types, which encoder comprises a filter for reducing visual artefacts due to a block boundary, wherein the filter is arranged to operate adaptively according to the block types of the frame in the environment of the block boundary.

38. (Previously presented) A video decoder comprising means for reducing visual artefacts in a frame of a digital video signal, which is coded by blocks and then decoded, a block type being defined according to the coding method for a block selected according to a predetermined set of coding types, which video decoder comprises a filter for reducing visual artefacts due to a block boundary, wherein the filter is arranged to operate adaptively according to the block types of the frame in the environment of the block boundary.

39. (Previously presented) A video codec comprising means for coding and decoding a digital video signal by blocks, a block type being defined according to the coding method for a block selected according to a predetermined set of coding types, which video codec comprises a filter for reducing visual artefacts due to a block boundary, wherein the filter is arranged to operate adaptively according to the block types of the frame in the environment of the block boundary.

40. (Previously presented) A mobile terminal comprising a video codec which comprises means for coding and decoding a digital video signal by blocks, a block type being defined according to the coding method for a block selected according to a predetermined set of coding types, which video codec comprises a filter for reducing visual artefacts due to a block boundary, wherein the filter is arranged to operate adaptively according to the block types of the frame in the environment of the block boundary.

41. (Currently amended) A storage medium comprising a software program for reducing visual artefacts due to block boundaries between decoded image blocks in a frame of a digital video signal, the software program comprising machine executable code for performing an adaptive block boundary filtering operation on a block boundary formed between a first decoded image block on a first side of the block boundary and a second decoded image block on a second side of the block boundary, the first decoded image block having been encoded using a first type of encoding method and the second decoded image block having been encoded using a second type of encoding method, wherein the software program comprises machine executable code for ~~determining~~ examining the types of the first and second encoding methods to determine a value of at least one parameter of the adaptive block boundary filtering operation performed on the block boundary ~~by examination of the types of the first and second encoding methods~~.

42. (Currently amended) A method of video encoding comprising reducing visual artefacts due to block boundaries between decoded image blocks in a frame of a

digital video signal by performing an adaptive block boundary filtering operation on a block boundary formed between a first decoded image block on a first side of the block boundary and a second decoded image block on a second side of the block boundary, the first decoded image block having been encoded using a first type of encoding method and the second decoded image block having been encoded using a second type of encoding method, wherein the method comprises ~~determining~~ examining the types of the first and second encoding methods to determine a value of at least one parameter of the adaptive block boundary filtering operation performed on the block boundary ~~by examination of the types of the first and second encoding methods~~.

43. (Currently amended) A method of video decoding including a method for reducing visual artefacts due to block boundaries between decoded image blocks in a frame of a digital video signal by performing an adaptive block boundary filtering operation on a block boundary formed between a first decoded image block on a first side of the block boundary and a second decoded image block on a second side of the block boundary, the first decoded image block having been encoded using a first type of encoding method and the second decoded image block having been encoded using a second type of encoding method, wherein the method comprises ~~determining~~ examining the types of the first and second encoding methods to determine a value of at least one parameter of the adaptive block boundary filtering operation performed on the block boundary ~~by examination of the types of the first and second encoding methods~~.

44.-53. (Cancelled)

54. (Currently amended) A video encoder comprising a block boundary filter for reducing visual artefacts due to block boundaries between decoded image blocks in a frame of a digital video signal, the filter being arranged to perform an adaptive block boundary filtering operation on a block boundary formed between a first decoded image block on a first side of the block boundary and a second decoded

image block on a second side of the block boundary, the first decoded image block having been encoded using a first type of encoding method and the second decoded image block having been encoded using a second type of encoding method, wherein the block boundary filter is arranged to examine the types of the first and second encoding methods to determine a value of at least one parameter of the adaptive block boundary filtering operation performed on the block boundary ~~by examination of the types of the first and second encoding methods~~.

55. (Currently amended) A video decoder comprising a block boundary filter for reducing visual artefacts due to block boundaries between decoded image blocks in a frame of a digital video signal, the filter being arranged to perform an adaptive block boundary filtering operation on a block boundary formed between a first decoded image block on a first side of the block boundary and a second decoded image block on a second side of the block boundary, the first decoded image block having been encoded using a first type of encoding method and the second decoded image block having been encoded using a second type of encoding method, wherein the block boundary filter is arranged to examine the types of the first and second encoding methods to determine a value of at least one parameter of the adaptive block boundary filtering operation performed on the block boundary ~~by examination of the types of the first and second encoding methods~~.

56. (Currently amended) A video codec comprising a block boundary filter for reducing visual artefacts due to block boundaries between decoded image blocks in a frame of a digital video signal, the filter being arranged to perform an adaptive block boundary filtering operation on a block boundary formed between a first decoded image block on a first side of the block boundary and a second decoded image block on a second side of the block boundary, the first decoded image block having been encoded using a first type of encoding method and the second decoded image block having been encoded using a second type of encoding method, wherein the block boundary filter is arranged to examine the types of the first and second encoding methods to determine a value of at least one parameter

of the adaptive block boundary filtering operation performed on the block boundary ~~by examination of the types of the first and second encoding methods~~.

57. (Currently amended) A mobile terminal comprising a block boundary filter for reducing visual artefacts due to block boundaries between decoded image blocks in a frame of a digital video signal, the filter being arranged to perform an adaptive block boundary filtering operation on a block boundary formed between a first decoded image block on a first side of the block boundary and a second decoded image block on a second side of the block boundary, the first decoded image block having been encoded using a first type of encoding method and the second decoded image block having been encoded using a second type of encoding method, wherein the block boundary filter is arranged to examine the types of the first and second encoding methods to determine a value of at least one parameter of the adaptive block boundary filtering operation performed on the block boundary ~~by examination of the types of the first and second encoding methods~~.

58. (Previously Presented) A method according to claim 1, wherein the first and second encoding methods are of the same type.

59. (Previously Presented) A block boundary filter according to claim 19, wherein the first and second encoding methods are of the same type.

60. (Previously Presented) A storage medium according to claim 41, wherein the first and second encoding methods are of the same type.

61. (Previously Presented) A method of video encoding according to claim 42, wherein the first and second encoding methods are of the same type.

62. (Previously Presented) A method of video decoding according to claim 43, wherein the first and second encoding methods are of the same type.

63. (Previously Presented) A video encoder according to claim 54, wherein the first and second encoding methods are of the same type.

64. (Previously Presented) A video decoder according to claim 55, wherein the first and second encoding methods are of the same type.

65. (Previously Presented) A video codec according to claim 56, wherein the first and second encoding methods are of the same type.

66. (Previously Presented) A mobile terminal according to claim 57, wherein the first and second encoding methods are of the same type.

67. (Previously Presented) A digital signal processor arranged to perform a method for reducing visual artefacts due to block boundaries according to claim 1.

68. (Currently Amended) A digital signal processor comprising a filtering block for reducing visual artefacts due to block boundaries between decoded image blocks in a frame of a digital video signal, the filter block being arranged to perform an adaptive block boundary filtering operation on a block boundary formed between a first decoded image block on a first side of the block boundary and a second decoded image block on a second side of the block boundary, the first decoded image block having been encoded using a first type of encoding method and the second decoded image block having been encoded using a second type of encoding method, wherein the filtering block is arranged to examine the types of the first and second encoding methods to determine a value of at least one parameter of the adaptive block boundary filtering operation performed on the block boundary ~~by examination of the types of the first and second encoding methods~~.